25

	16	
Purified Water	q.8 ⁰	
Stearyl Alcohol	75.0	20
Talc	7.5	2
Magnesium Stearate	3.75	1
Total:	375.0	100

*Used in manufacture and remains in final product as residual quantity only.

The tablets of Example 1 are then tested for dissolution via the USP Basket Method, 37°C, 100 RPM, first 10 hour 700 ml gastric fluid at pH 1.2, then changed to 900 ml at 7.5. The results are set forth in Table 2 below:

TABLE 2 Dissolution of Oxycodone 30 mg Controlled Release Tablets

	<u>Time</u>	§ Oxycodone Dissolved
15 .	1	33.1
	2	43.5
	4	58.2
	8	73.2
	12 .	81.8
20	18	85.8
	24	89.2

EXAMPLE 2

Controlled Oxycodone HCl 10 mg

Release Tablets - Organic Manufacture

The required quantities of oxycodone hydrochloride and spray dried lactose are transferred into an appropriate sized mixer and mix for approximately 6 minutes. Approximately 40 percent of the required Eudragit® RS PM 30 powder is dispersed in Ethanol. While the powders are mixing, the powders are granulated with the dispersion and the mixing continued until a moist granular mass is formed. Additional ethanol is added if needed to reach granulation end point. The granulation is transferred to 35 a fluid bed dryer and dried at 30°C; and then passed

17

through a 12-mesh screen. The remaining Eudragit® RS PM is dispersed in a solvent of 90 parts ethanol and 10 parts purified water; and sprayed onto the granules in the fluid bed granulator/dryer at 30°C. Next, the granu-5 late is passed through a 12-mesh screen. The required quantity of stearyl alcohol is melted at approximately 60-70°C. The warm granules are returned to the mixer. While mixing, the melted stearyl alcohol is added. The coated granules are removed from the mixer and allowed to Thereafter, they are passed through a 12-mesh screen.

Next, the granulate is lubricated by mixing the required quantities of talc and magnesium stearate in a suitable blender. The granulate is then compressed to 125 mg tablets on a suitable tableting machine.

The formula for the tablets of Example 2 (10 mg controlled release oxycodone) is set forth in Table 3 below: Table 3

Formula of Oxycodone HC1 10 mg Controlled Release Tablets

20			Percent
	Component	Mg/Tablet	(by wt)
	Oxycodone hydrochloride	10.00	8
	Lactose (spray-dried)	71.25	57
	Eudragit® RS PM	15.00	12
25	Ethanol	q.s.*	
	Purified Water	q.s.*	
	Stearyl Alcohol	25.00	20
	Talc	2.50	2
	Magnesium stearate	1.25	_1
30	Total:	125.00 mg	100

*Used only in the manufacture and remains in final product as residual quantity only.

The tablets of Example 2 are then tested for dissolution via USP Basket Method at 37°C, 100 RPM, first

PCT/US 92/10146

18

hour 700 ml simulated gastric (pH 1.2) then changed to 900 ml at pH 7.5.

The results are set forth in Table 4 below:

Table 4

Dissolution of Oxycodone 10 mg

Controlled Release Tablets

		Hour	§ Dissolved
•		1	35.9
		2	47.7
10		4	58.5
10		8	67.7
	•	12	74.5
		18	76.9
		24	81.2

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EXAMPLES 3 - 4

Controlled Release Oxycodone

10 and 20 mg Tablets (Aqueous Manufacture)

Eudragit® RS 30D and Triacetin® are combined while 20 passing though a 60 mesh screen, and mixed under low shear for approximately 5 minutes or until a uniform dispersion is observed.

Next, suitable quantities of Oxycodone HCl, lactose, and povidone are placed into a fluid bed granulator/dryer (FBD) bowl, and the suspension sprayed onto the powder in the fluid bed. After spraying, the granulation is passed through a #12 screen if necessary to reduce lumps. The dry granulation is placed in a mixer.

In the meantime, the required amount of stearyl alcohol is melted at a temperature of approximately 70°C. The melted stearyl alcohol is incorporated into the granulation while mixing. The waxed granulation is transferred to a fluid bed granulator/dryer or trays and allowed to cool to room temperature or below. The cooled 35 granulation is then passed through a #12 screen. There-

PATAUS 92/10146

19

after, the waxed granulation is placed in a mixer/blender and lubricated with the required amounts of talc and magnesium stearate for approximately 3 minutes, and then the granulate is compressed into 125 mg tablets on a 5 suitable tableting machine.

The formula for the tablets of Example 3 is set forth in Table 5 below:

Table 5 Formula of Controlled Release Oxycodone 10 mg Tablets

10	Component	THE RESERVE OF THE PROPERTY OF			
		Mg/Tablet	%(by wt)		
	Oxycodone Hydrochloride	10.0	8.0		
	Lactose (spray dried)	69.25	55.4		
	Povidone	5.0	4.0		
15	Eudragit® RS 30D (solids) Triacetin®	10.0*	8.0		
15		2.0	1.6		
	Stearyl Alcohol Talc	25.0	20.0		
		2.5	2.0		
	Magnesium Stearate Total:	1.25	_1.0		
20		125.0	100.0		
20	*Approximately 33 32 ma				

Approximately 33.33 mg Eudragit® RS 30D Aqueous dispersion is equivalent to 10 mg of Eudragit RS 30D dry substance.

The tablets of Example 3 are then tested for dissolution via the USP Basket Method at 37°C, 100 RPM, 25 first hour 700 ml simulated gastric fluid at pH 1.2, then changed to 900 ml at pH 7.5. The results are set forth in Table 6 below:

Table 6

30	Dissolution	n of Oxycodone 10 mg		
30	<u>Controlle</u>	Controlled Release Tablets		
	Hour	3 Oxycodone Dissolved		
	1	38.0		
	2	47.5		
25	4	62.0		
35	8	79.8		

12	91.1
18	94.9
24	98.7

The formula for the tablets of Example 4 is set

5 forth in Table 7 below:

Table 7

	Formula of Controlled Release O	xycodone 20 mg Tablets
	Component	Mg/Tablet
	Oxycodone Hydrochloride	20.0
10	Lactose (spray dried)	59.25
-	Povidone	5.0
	Eudragit ^e RS 30D (solids)	10.0*
	Triacetin ^e	2.0
	Stearyl Alcohol	25.0
15	Talc	2.5
	Magnesium Stearate	1.25
	Total:	125.0

The tablets of Example 4 are then tested for 20 dissolution via the USP Basket Method at 37°C, 100 RPM, first hour 700 ml simulated gastric fluid at pH 1.2, then changed to 900 ml at pH 7.5. The results are set forth in Table 8 below:

Table 8

25	Dissolution of Oxycodone	20 mg Controlled Release Tablets
	Hour	<pre>% Oxycodone Dissolved</pre>
	1	31
	2	44
	4	57
30	8 .	71
	12	79
	18	86
	24	89

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21

EXAMPLES 5-6

In Example 5, 30 mg controlled release oxycodone hydrochloride tablets are prepared according to the process set forth in Example 1.

In Example 6, 10 mg controlled release oxycodone hydrochloride tablets are prepared according to the process set forth in Example 2.

Thereafter, dissolution studies of the tablets of Examples 5 and 6 are conducted at different pH levels, namely, pH 1.3, 4.56, 6.88 and 7.5.

The results are provided in Tables 9 and 10 below:

Table 9 - Example 5 Percentage Oxycodone HCl

30 mg Tablets Dissolved Over Time							
						18	24
						97.0	
						99.4	
						100.5	
						89.7	

Table 10 - Example 6 Percentage Oxycodone HCl - 10 mg Tablets Dissolved Over Time

25	ъĦ	1	2	4	8	12	18	24
			41.5					
			44.2					
			45.2					
			40.1					

EXAMPLES 7-12

In Examples 7-12, 4 mg and 10 mg oxycodone HCl tablets were prepared according to the formulations and methods set forth in the assignee's U.S. Patent No. 35 4,990,341.

FOT/US 92/10146 nJ/US 20 JAN 1993

22

In Example 7, oxycodone hydrochloride (10.00 gm) was wet granulated with lactose monohydrate (417.5 gm) and hydroxyethyl cellulose (100.00 gm), and the granules were sieved through a 12 mesh screen. The granules were then 5 dried in a fluid bed dryer at 50° C and sieved through a 16 mesh screen.

Molten cetostearyl alcohol (300.0 gm) was added to the warmed oxycodone containing granules, and the whole was mixed thoroughly. The mixture was allowed to cool in the air, regranulated and sieved through a 16 mesh screen.

Purified Talc (15.0 gm) and magnesium stearate (7.5 gm) were then added and mixed with the granules. The granules were then compressed into tablets.

Example 8 is prepared in the same manner as Example 7; however, the formulation includes 10 mg oxycodone HCl/tablet. The formulas for Examples 7 and 8 are set forth in Tables 11 and 12, respectively.

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•	v	

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Table 11

rormula	tion of Example 7	· -
<u>Ingredient</u>	mq/tablet	g/batch
Oxycodone hydrochloride	4.0	10.0
Lactose monohydrate	167.0	417.5
Hydroxyethylcellulose	40.0	100.0
Cetostearyl alcohol	120.0	300.0
Purified talc	6.0	15.0
Magnesium stearate	3.0	7.5

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Table 12

FORMULA	tion of Example 8	
Ingredient	mg/tablet	g/batch
Oxycodone hydrochloride	10.0	25.0
Lactose monohydrate	167.0	417.5
Hydroxyethylcellulose	40.0	100.0

	23	
Cetostearyl alcohol	120.0	300.0
Talc	6.0	15.0
Magnesium stearate	3.0	7.5

In Example 9, 4 mg oxycodone HCl controlled release tablets are prepared according to the excipient formula cited in Example 2 of U.S. Patent No. 4,990,341. The method of manufacture is the same as set forth in Examples 7 and 8 above. Example 10 is prepared according to 10 Example 9, except that 10 mg oxycodone HCl is included per tablet. The formulas for Examples 9 and 10 are set forth in Tables 13 and 14, respectively.

Table 13

	Formulation of Example 9						
15	Ingredient Oxycodone hydrochloride	mg/tablet	g/batch 10.0				
	Anhydrous Lactose	167.0	417.5				
	Hydroxyethylcellulose	30.0	75.0				
	Cetostearyl alcohol	90.0	225.0				
20	Talc	6.0	· 15.0				
	Magnesium stearate .	3.0	7.5				

Table 14

rormulation of Example 14

25	<u>Ingredient</u>	mg/tablet	g/batch
	Oxycodone hydrochloride	10.0	25.0
	Hydrous lactose	167.0	417.5
	Hydroxyethylcellulose	30.0	75.0
	Cetostearyl alcohol	90.0	225.0
30	Talc	6.0	15.0
	Magnesium stearate	3.0	7.5

In Example 11, oxycodone 4 mg controlled release tablets are prepared with the same excipient formula 35 cited in Example 3 of U.S. patent No. 4,990,341.

Oxycodone hydrochloride (32.0 gm) was wet granulated with lactose monohydrate (240.0 gm) hydroxyethyl cellulose (80.0 gm) and methacrylic acid copolymer (240.0 gm, Eudragit L-100-55), and the granules were sieved through 5 a 12 mesh screen. The granules were then dried in a Fluid Bed Dryer at 50° C and passed through a 16 mesh screen.

The warmed oxycodone containing granules was added molten cetostearyl alcohol (240.0 gm), and the whole was 10 mixed thoroughly. The mixture was allowed to cool in the air, regranulated and sieved through a 16 mesh screen. The granules were then compressed into tablets.

Example 12 is prepared in identical fashion to Example 11, except that 10 mg oxycodone HCl is included 15 per tablet. The formulations for Examples 11 and 12 are set forth in Tables 15 and 16, respectively.

Table 15

Formulation of Example 11

	<u>Ingredient</u>	mg/tablet	g/batch
20	Oxycodone hydrochloride	4.0	32.0
	Lactose monohydrate	30.0	240.5
	Hydroxyethylcellulose	10.0	80.0
	Methacrylic acid copolymer	30.0	240.0
	Cetostearyl alcohol	30.0	240.0

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Table 16

Formulation of Example 12

	Ingredient	mg/tablet	g/batch
	Oxycodone hydrochloride	10.0	80.0
30	Lactose monohydrate	30.0	240.5
	Hydroxyethylcellulose	10.0	80.0
	Methacrylic acid copolymer	30.0	240.0
	Cetostearyl alcohol	30.0	240.0

FGI/US 92/10146 ..0/US 20 JAN 1993

25

Next, dissolution studies were conducted on the tablets of Examples 7-12 using the USP basket method as described in the U.S. Pharmacopoeia XXII (1990). The speed was 100 rpm, the medium was simulated gastric fluid for the first hour followed by simulated intestinal fluid thereafter, at a temperature of 37° C. Results are given in Table 17.

TABLE 17

10		DIS	SOLUTION	STUDIES	OF EXAMPL	ES 7-12	
	Time		*	Oxycodo	ne Dissolv	ed	
	(hrs)	Ex. 7	Ex. 8	Ex. 9	Ex. 10	Ex. 11	Ex. 12
	1	23.3	25.5	28.1	29.3	31.3	40.9
	2	35.6	37.5	41.5	43.2	44.9	55.6
15	4	52.9	56.4	61.2	63.6	62.1	74.2
	8	75.3	79.2	83.7	88.0	82.0	93.9
	12	90.7	94.5	95.2	100.0	91.4	100.0

EXAMPLES 13-16

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Clinical Studies

In Examples 13-16, randomized crossover bioavailability studies were conducted employing the formulation of Examples 2 (organic manufacture) and 3 (aqueous manufacture) .

In Example 13, a single dose fast/fed study was conducted on 24 subjects with oxycodone tablets prepared according to Example 3.

In Example 14, a steady-state study was conducted on 23 subjects after 12 hours with oxycodone tablets pre-30 pared according to Example 2, and compared to a 5 mg oxycodone immediate-release solution.

In Example 15, a single dose study was conducted on 22 subjects using oxycodone tablets prepared according to Example 3, and compared to a 20 mg oxycodone immediate 35 release solution.

FITUS 92/10146 20 JAN 1993 RO/US

26

In Example 16, a 12 subject single-dose study was conducted using 3 x 10 mg oxycodone tablets prepared according to Example 3, and compared to a 30 mg oxycodone immediate release solution.

The results of Examples 13-16 are set forth in Table 18.

			Table 18		
			AUC	Cmax	Tmax
	Example	Dosage	ng/ml/hr	ng/ml	hr
10	13	10 mg CR Fast	63	6.1	3.8
10		10 mg CR Fed	68	7.1	3.6
	14	5 mg IR q6h	· 121	17	1.2
		10 mg CR q12h	130	17	3.2
	15	20 mg IR	188	40	1.4
15		2 x 10 mg CR	197	18	2.6
13	16	30 mg IR	306	53	1.2
	10	3 x 10 mg CR	350	35	2.6
		30 mg CR	352	36	2.9

IR denotes immediate-release oxycodone solution.

CR denotes controlled-release tablets 20

RYAMPLE 17 CLINICAL STUDIES

In Example 17, a single dose, double blind, random-25 ized study determined the relative analgesic efficacy, the acceptability, and relative duration of action of an oral administration of controlled release oxycodone 10, 20 and 30 mg prepared according to the present invention (CR OXY) compared to immediate release oxycodone 15 mg 30 (IR OXY), immediate release oxycodone 10 mg in combination with acetaminophen 650 mg (IR OXY/APAP) and placebo in 180 patients with moderate or severe pain following abdominal or gynecological surgery. Patients rated their pain intensity and pain relief hourly for up to 12 hours postdosing. Treatments were compared using standard

HC1/US 72-/10146 20 JAN 1993

27

scales for pain intensity and relief, and onset and duration of pain relief.

All active treatments were significantly superior to placebo for many of the hourly measures, and for sum pain 5 intensity differences (SPID) and total pain relief (TOTPAR). A dose response was seen among the 3 dose levels of CR OXY for pain relief and peak pain intensity difference (PID), with CR OXY 20mg and 30 mg being significantly better than the 10 mg dose. IR OXY was significantly superior to CR OXY 10 mg at hr 1 and 2. IR OXY/APAP was significantly superior to the 3 doses of CR OXY at hr 1, and to CR OXY 10 mg at hrs 2 through 5. Onset time was significantly shorter for the IR OXY and IR OXY/APAP treatment groups in comparison to the 3 CR 15 OXY treatments. The distribution functions for duration of relief revealed significantly longer duration of relief for the three CR OXY doses than for IR OXY and IR OXY/APAP. No serious adverse experiences were reported. The results are more particularly reported in Table 19 20 below.

TABLE 19 PATIENT DISPOSITION TREATMENT GROUP

25								
		IR	УХС		CR	OXY-		
		15mg	PLACEBO	10mg	20mg	30mg	2 PERC*	TOTAL
30	Enrolled and Randomized to Study Treatment	31	31	30	30	30	30	182
35	Entered the Study Treat- ment Phase	31	31	30	30	30	30	182
	Completed the Study	31	30	30	30	30	30	181

Discontinued from the Study Excluded from Efficacy Analysis -Vomited prior to 1 hr post dose 0 10 -Inadvertently received rescue during study 15 Analysis Population: -Evaluable for Safety and 180 30 30 30 30 Efficacy 20 -Evaluable for 30 30 30 30 <u>Safety</u>

* 2 tablets of Percocet*

The time-effect curves for pain intensity, pain intensity differences and pain relief are shown in Figures 1-4. CR OXY 10 mg had significantly (p < .05)lower pain intensity scores than the placebo-treated patients at hours 3-11 and lower pain scores than IR OXY 15 mg and Percocet® at hour 10. CR OXY 20 mg has significantly (p < .05) lower pain intensity scores compared to placebo at hours 2 - 11 and significantly (p < .05) lower pain scores than CR OXY 10 mg, IR OXY 15 mg and 35 Percocet at hours 9-11. CR OXY 30 mg had significantly (p < .05) lower pain scores than placebo at hours 2-11 and lower pain scores than CR OXY 10 mg at hours 2, 3, and 5 and lower scores than Percocet® at hour 10.

For hourly pain relief scores categorical and visual analog scales (CAT and VAS), CR OXY 10 mg had significantly (p < .05) higher pain relief scores than placebo at hours 3-11 and higher relief scores than IR OXY and Percocet® at hour 10 (and Percocet® at hour 11). CR OXY

CT/US 92/10146 RO/US 20 JAN 1993

29

20 mg had significantly (p < .05) higher relief scores than placebo at hours 2-12 and higher relief scores than Percocet® at hours 9-12. In addition, CR OXY had significantly (p < .05) higher pain relief than IR OXY at 5 hours 10-12. CR OXY 30 mg had significantly (p < .05) higher pain relief scores than placebo at hours 2-12 and higher scores than Percocet® at hours 9-12 and IR OXY 15 mg at hour 10.

Each treatment group was significantly (p < .05) better than placebo with respect to the sum of the pain intensity differences (SPID) and total pain relief (TOTPAR) .

Duration of pain relief as measured by the patient stopwatch method showed that CR OXY 10 mg, 20 mg and 30 mg had significantly (p < .05) longer duration of action compared to IR OXY 15 mg and 2 tablets Percocete. In addition, the three controlled-release formulations had significantly (p < .05) longer times to remedication compared to Percocets.

Before remedication, a total of 104 (57%) of patients reported 120 adverse experiences. The most common were somnolence, fever, dizziness and headache.

Based upon the results of this study it is concluded that the controlled release oxycodone formulations of the present invention relieve moderate to severe postoperative pain, e.g., due to abdominal or gynecological surgery in women. There is a dose response noted in which placebo < 10 mg < 20 mg < 30 mg CR OXY following a single dose. Onset of action occurred in one hour with peak effects noted from 2 to 5 hours and a duration of effect from 10 to 12 hours. In the chronic pain situation steady state dosing may prolong this effect. Side effects are expected and easily managed. Headache may be related to dose. Dizziness and somnolence were reported.

PYNS 92/10146 40/US 2 0 JAN 1993

30

IR OXY 15 mg has an intermediate peak effect compared to controlled release oxycodone. Its duration of action is shorter (6-8 hours). Percocet® is quite effective in terms of onset, peak effect and safety. The 5 duration of action is 6-8 hours.

In summary, CR OXY was clearly an effective oral analgesic, with a slower onset but a longer duration of effect than either IR OXY or IR OXY/APAP.

10

EXAMPLE 18

CLINICAL STUDIES

. In Example 18, a steady state crossover trial was conducted in 21 normal male subjects comparing

- CR OXY 10 mg administered every 12 hours a. (q12h); and
- Roxicodone® oral solution 5 mg (ROX) b. administered every 6 hours (q6h),

Treatment (b) was the study reference standard. The average age was 34 years, height 176 cm and weight 75 kg. 20 No unusual features were noted about the group.

Figure 5 shows the mean plasma oxycodone concentrations for the two formulations over the 12 hour dosing interval. The results are summarized in Table 18 in terms of mean values, ratios of mean values and 90% 25 confidence intervals.

As inspection of Table 18 reveals, with one exception, no significant differences were detected between the two formulations. The single exception is the mean t_{max} for CR OXY of 3.18 hours which, as expected for a 30 controlled release formulation, significantly exceeded the ROX mean of 1.38 hours. Mean AUC-based bicavailability, (ROX = 100%) was 104.4% with 90% confidence limits of 90.9 to 117.9%. Thus, the FDA specification of ±20% is met so that the study results support an 35 assertion of equal oxycodone availability.

92/10146 20 JAN 1993

31

TABLE 20

SUMMARY OF PHARMACOKINETIC PARAMETERS FOR OXYCODONE FOLLOWING A SINGLE DOSE OF CR OXY (10mg q12H) AND ROXICODONE® ORAL SOLUTION (5mg q6h)

OXY/ ROXICODONE ROXI 90% CI* SOLUTION (%) CR OXY PARAMETER 10 (ng/mL) ARITH. MEAN(SD) 15.11(4.69) 15.57(4.41) 97.08 85.59-108.50 GEOMETRIC MEAN 14.43 C_{min} (ng/mL) ARITH.MEAN(SD) 6.24(2.64) (ng/mL) 6.47(3.07) 96.41 15 112.74 GEOMETRIC MEAN 5.62 (hrs) ARITH.MEAN 160.71-1.38(0.71) * 230.17 298.71 (SD) 3.18(2.21)20 AUC(0-12 hrs) 90.92-ARITH. 103.50(40.03) 99.10(35.04) 104.44 117.94 MEAN (SD) GEOMETRIC 93,97 103.29 25 MEAN 97.06 **\Swing** 62.06~ ARITH MEAN 134.92 <u> 176.36(139.0) 179.0(124.25)</u> (SD) %Fluctuation 76.81-ARITH. 30 117.75 (52.47) 92.22 107.57 108.69(38.77) MEAN (SD) End Point , 117.77-ARITH. MEAN (SD) -1.86(2.78)-1.86(2.19) 99.97 90% Confidence Interval 35 --Significant Difference p < 0.05

EXAMPLE 19

CLINICAL STUDIES

In Example 19, twenty-four normal, healthy male sub-40 jects were enrolled in a randomized single-dose two-way crossover study to compare the plasma oxycodone concentrations obtained after dosing with two controlledrelease oxycodone 10 mg tablets versus 20 mg (20 ml of 5 45 mg/5 ml) of immediate release (IR) oxycodone hydrochloride solution. Twenty-three subjects completed the study and were eligible for analysis.

PCT/US 92/10146 ...orus 20 JAN 1993

Plasma oxycodone concentrations were determined by a high performance liquid chromatographic procedure. Arithmetic Mean C_{max} , t_{max} , AUC, and half-lives calculated from individual plasma oxycodone concentration-versus-time 5 data are set forth in Table 21:

Pharmaco- kinetic Parameter	IR Oxycodone	Test Product CR Oxyco				
C _{max} (ng/ml)	41.60	18.62	44.75	32.5- 57.0		
t _{max} (hours)	1.30	2.62	200.83	169.8- 232.6		
AUC (0-36)	194.35	199.62	102.71	89.5 - 115.9		
(mg x hr/r AUC (0-∞) (ng x hr/r	194.38	208.93	107.49	92.9- 121.9		
t _{is (elim)} (hrs)	3.21	7.98*	249.15	219.0- 278.8		
t (abs) (hrs)	0.35	0.92*	264.17	216.0- 310.7		

Oral bioavailability (CR oxycodone 2 x 10 mg/IR oxycodone 20 mg) Statistically significant (p = 0.0001) 40

For C_{\max} , t_{\max} , $t_{\% \, (\text{elim})}$ and $t_{\% \, (\text{abs})}$ there were statistically significant differences between the CR OXY and IR OXY. There were no statistically significant 45 differences between the two treatments in the extent of absorption [AUC (0,36), AUC (0,∞). The 90% confidence

92/10146 20 JAN 1993

33,

interval for CR OXY relative to IR OXY relative was 89.5% - 115.9% for AUC (0,36) and 92.9% - 121.9% for AUC (0,∞). Based on the 90% confidence interval analysis, the controlled-release oxycodone tablets were equivalent in extent of absorption (AUC 0,36) to the immediate-release oxycodone solution. The controlled-release oxycodone absorption was slower by approximately 1.3 hours. No statistically significant differences were noted between . the two treatments with reference to adverse experiences, none of which were considered clinically unusual for opiates for this type of study.

The above studies demonstrate a significant dose-response relationship utilizing the controlled release oxycodone formulations of the present invention at dosages of 10, 20 and 30 mg which does not deviate from parallelism with dose-response slopes for MS Contin in similarly designed well-controlled analgesic efficacy studies of MS Contin reported by Kaiko R.S., Van Wagoner D., Brown J., et al., "Controlled-Release Oral Morphine (MS Contine Tablets, MSC) in Postoperative Pain.", Pain Suppl., 5:S149 1990, who compared 30, 60, 90, and 120 mg of MS Contin as compared with 10 mg of intramuscular morphine and placebo and Bloomfield, et al., "Analgesic Efficacy and Potency of Two Oral Controlled-Release Morphine Preparations", Clinical Pharmacology & Therapeutics, (in press), who compared 30 and 90 mg of MS Contin as compared to 30 and 90 mg of another controlled-release oral morphine preparation, Oramorph SR 30 mg tablets.

The examples provided above are not meant to be exclusive. Many other variations of the present invention would be obvious to those skilled in the art, and are contemplated to be within the scope of the appended claims.

PT/US 92/10146 h_/US 20 JAN 1993

34

WHAT IS CLAIMED IS:

- A method for substantially reducing the range in daily dosages required to control pain in human patients, comprising administering an oral controlled 5 release dosage formulation comprising from about 10 to about 40 mg oxycodone or a salt thereof which provides a mean maximum plasma concentration of oxycodone from about 6 to about 60 ng/ml from a mean of about 2 to about 4.5 hours after administration, and a mean minimum plasma 10 concentration from about 3 to about 30 ng/ml from a mean of about 10 to about 14 hours after repeated administration every 12 hours through steady-state conditions.
- A method for substantially reducing the range 15 in daily dosages required to control pain in substantially all human patients, comprising administering an oral solid controlled release dosage formulation comprising from about 10 mg to about 160 mg oxycodone or a salt thereof which provides a mean maximum plasma concentra-20 tion of oxycodone up to about 240 ng/ml from a mean of up to about 2 to about 4.5 hours after administration, and a mean minimum plasma concentration up to about 120 ng/ml from a mean of about 10 to about 14 hours after repeated administration every 12 hours through steady-state 25 conditions.
- A controlled release oxycodone formulation for oral administration to human patients, comprising from about 10 to about 40 mg oxycodone or a salt thereof, said 30 formulation providing a mean maximum plasma concentration of oxycodone from about 6 to about 60 ng/ml from a mean of about 2 to about 4.5 hours after administration, and a mean minimum plasma concentration from about 3 to about 30 ng/ml from a mean of about 10 to about 14 hours after

7718 92/10146 ...JUS 20 JAN 1993

35

repeated administration every 12 hours through steadystate conditions.

- A controlled release oxycodone formulation for 5 oral administration to human patients, comprising from about 10 mg to about 160 mg oxycodone or a salt thereof, said formulation providing a mean maximum plasma concentration of oxycodone from about 6 to about 240 ng/ml from a mean of about 2 to about 4.5 hours after administra-10 tion, and a mean minimum plasma concentration from about 3 to about 120 ng/ml from a mean of about 10 to about 14 hours after repeated administration every 12 hours through steady-state conditions.
- A solid controlled release oral dosage form, 5. 15 comprising
 - (a) oxycodone or a salt thereof in an amount from about 10 to about 160 mg;
 - (b) an effective amount of a controlled release matrix selected from the group consisting of hydrophilic polymers, hydrophobic polymers, digestible substituted or unsubstituted hydrocarbons having from about 8 to about 50 carbon atoms, polyalkylene glycols, and mixtures of any of the foregoing; and
 - (c) a suitable amount of a suitable pharmaceutical diluent, wherein said composition provides a mean maximum plasma concentration of oxycodone from about 6 to about 240 ng/ml from a mean of about 2 to about 4.5 hours after administration, and a mean minimum plasma concentration from about 3 to about 120 ng/ml from a mean of about 10 to about 14 hours after repeated administration every 12 hours through steady-state conditions.

CT/US 92/10146 ...Jrus 20 JAN 1993

- The controlled release composition of claim 5, wherein said controlled release matrix comprises an acrylic resin.
- A solid controlled release oral dosage form, 5 comprising
 - (a) an analgesically effective amount of spheroids comprising oxycodone or a salt thereof and either a spheronising agent or an acrylic polymer or copolymer, such that the total dosage of oxycodone in said dosage form is from about 10 to about 160 mg;
- (b) a film coating which controls the release of the oxycodone or oxycodone salt at a controlled rate in an aqueous medium, wherein said composition provides 15 an in vitro dissolution rate of the dosage form;

said composition providing a mean maximum plasma concentration of oxycodone from about 6 to about 240 ng/ml from a mean of about 2 to about 4.5 hours after administration, and a mean minimum plasma concentration 20 from about 3 to about 30 ng/ml from a mean of about 10 to about 14 hours after repeated administration every 12 hours through steady-state conditions.

- The controlled release composition of claim 7, 25 wherein said film coating comprises a water insoluble material selected from the group consisting of shellac or zein, a water insoluble cellulose, or a polymethacrylate.
- A controlled release tablet for oral adminis-30 tration comprising from about 10 to about 160 mg oxycodone or an oxycodone salt dispersed in a controlled release matrix, said tablet providing an in-vitro dissolution of the dosage form, when measured by the USP Paddle Method at 100 rpm at 900 ml aqueous buffer (pH 35 between 1.6 and 7.2) at 37° C, between 12.5% and 42.5%

92/10146 20 JAN 1993

37

(by wt) oxycodone released after 1 hour, between 25% and 55% (by wt) oxycodone released after 2 hours, between 45% and 75% (by wt) oxycodone released after 4 hours and between 55% and 85% (by wt) oxycodone released after 6 5 hours, the in vitro release rate being substantially independent of pH and chosen such that a mean maximum plasma concentration of oxycodone from about 6 to about 240 ng/ml is obtained in vivo from a mean of about 2 to about 4.5 hours after administration of the dosage form, 10 and a mean minimum plasma concentration from about 3 to about 30 ng/ml from a mean of about 10 to about 14 hours after repeated administration every 12 hours through steady-state conditions.

- 10. A dosage form according to claim 9, wherein the 15 in vitro dissolution rate is between 17.5% and 38% (by wt) oxycodone released after 1 hour, between 30% and 50% (by wt) oxycodone released after 2 hours, between 50% and 70% (by wt) oxycodone released after 4 hours and between 60% and 80% (by wt) oxycodone released after 6 hours.
- 11. A dosage form according to claim 9, wherein the in vitro dissolution rate is between 17.5% and 32.5% (by wt) oxycodone released after 1 hour, between 35% and 45% 25 (by wt) oxycodone released after 2 hours, between 55% and 65% (by wt) oxycodone released after 4 hours and between 65% and 75% (by wt) oxycodone released after 6 hours.

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ABSTRACT OF THE DISCLOSURE

A method for substantially reducing the range in daily dosages required to control pain in approximately 90% of patients is disclosed whereby an oral solid 5 controlled release dosage formulation having from about 10 to about 40 mg of oxycodone or a salt thereof is administered to a patient. The formulation provides a mean maximum plasma concentration of oxycodone from about 6 to about 60 ng/ml from a mean of about 2 to about 4.5 10 hours after administration, and a mean minimum plasma concentration from about 3 to about 30 ng/ml from about 10 to about 14 hours after repeated "q12h" (i.e., every 12 hour) administration through steady-state conditions. Another embodiment is directed to a method for substan-15 tially reducing the range in daily dosages required to control pain in substantially all patients by administering an oral solid controlled release dosage formulation comprising up to about 160 mg of oxycodone or a salt thereof, such that a mean maximum plasma concen-20 tration of oxycodone up to about 240 ng/ml from a mean of up to about 2 to about 4.5 hours after administration, and a mean minimum plasma concentration up to about 120 ng/ml from about 10 to about 14 hours after repeated "q12h" (i.e., every 12 hour) administration through steady-state conditions are achieved. Controlled release oxycodone formulations for achieving the above are also disclosed.

nri:

92-515

PATENT COOPERATION TREATY APPOINTMENT OF AGENT OR COMMON REPRESENTATIVE

The undersigned applicant hereby appoints as agents: Clifford M. Davidson, Harold D. Steinberg, Martin G. Raskin, and Brian Roffe of STEINBERG & RASKIN

> 1140 Avenue of the Americas New York, N.Y. USA 10036

to act on its behalf before the competent International Authorities in connection with the following international

CONTROLLED RELEASE OXYCODONE COMPOSITIONS TITLE: INTERNATIONAL APPLICATION NO.: PCT/US92/10146 INTERNATIONAL FILING DATE : November 25, 1992 filed with the United States Receiving Office and to receive payments on its behalf.

APPLICANT: Euroceltique S.A.

15 East 62nd Street New York, New York 10021 Unites States of America

APPLICANT:	Benjamin OSHLACK
ADDRESS:	351 East 84th Street, New York, New York 10028
SIGNATURE:	Benjami Ohlanh January 6 1943
INVENTOR/ APPLICANT: ADDRESS:	Mark CHASIN 3 Wayne Court, Manalpan, New Jersey 07726
SIGNATURE: DATE:	Jan Krain January 6, 1993

.J/US 92/101464 .J/US 20 JAN 1993

INVENTOR/ APPLICANT:	John Joseph MINOGUE
ADDRESS:	4 Woodside Drive, New City, New York 10956
SIGNATURE: DATE:	On Coseph Minorie
INVENTOR/ APPLICANT:	Robert KAIKO
ADDRESS:	10 Norfield Woods Rd., Weston, Connecticut 06883
SIGNATURE: DATE:	1/2/93

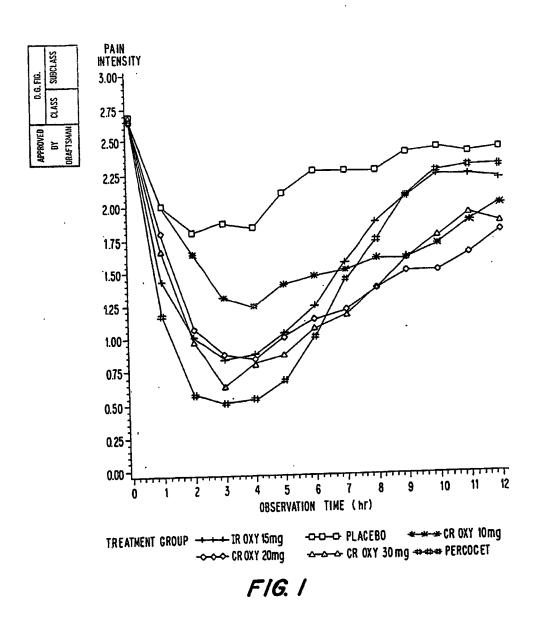
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1-31-92 RECORDATION PAT	ENTS ONLY 39 Rec'd PCT/PTO 18 JUN '93
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John Joseph MINOGUE, and	Internal Address:
Robert Francis KAIKO Additional name(s) of conveying party(ies) attached? yes	X no
Additional name(s) of conveying partyties, attached	
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Other	Additional name(s) & address(es) attached? Yes XNo
Execution Date: May 14, 1993	Additional name(s) of additional
at Approcation nominator of P	lication, the execution date of the application is: May 14, 1993
	B. Patent No.(s)
A. Patent Application No.(s)	B. Falcin 100/197
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Additional	numbers attached? Yes XNo
5. Name and address of party to whom correspondence	6. Total number of applications and patents involved: 1
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Name: Steinberg & Raskin	- A
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Washington, D.C. 20503	

Assignment of Application for Patent

Willitrens, Benjamin OSHLACK, Mark CHASIN, John Joseph MINOGUE and Robert Francis Kaiko, respectively	
of 351 East 84th St. New York NY 10028, 3 Wayne Court, Manalpan, NJ 0 and 10 Norfield Woods Rd., weston, CT 06883 ve invented certain new and useful	7726,
improvements in Controlled Release Oxycodone Compositions (Tible of Inventor)	
for which they are about to make application for	
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And Wihereas, Euroceltique, S.A.	
of 122 Roulevard de la Petrusse. Luxembourg	
Letters Patent to be obtained therefor from the United States; Roin . Cherefore, be it known by all whom it may concern, that for and in considera-	•
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and other valuable consideration to US in hand paid, the receipt of which is hereby	(7)
acknowledged we have assigned, sold, and set over, and by these presents do assign, sell,	7
and set over unto the said EUROCELTIQUE S. A.	7
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for the territory of the United States of America, and for all foreign countries.	6
all right title, and interest in and to the said invention, as fully set forth and	36
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to the full end of the term for which said Letters Patent are granted, as fully and entirely as the same would have been held byhad this assignment and sale not been made.	
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Bryan Orhlan (Granter fell of garber) Mark CHASIN	
Benjamin Oshlack	
John Joseph Minogue Robert Francis RATKO	
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Dated: 14 May 1993	



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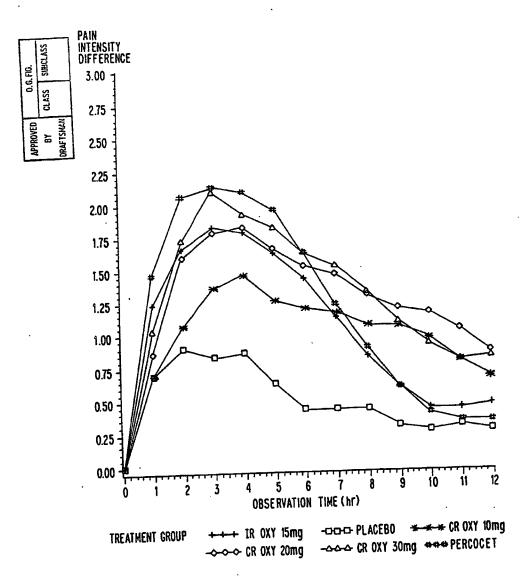
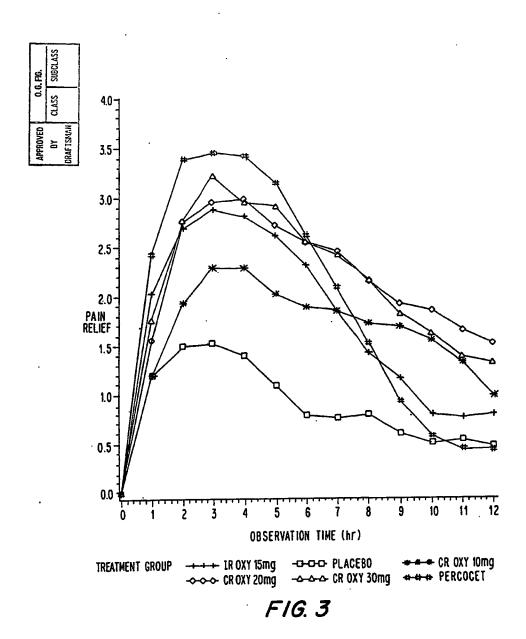


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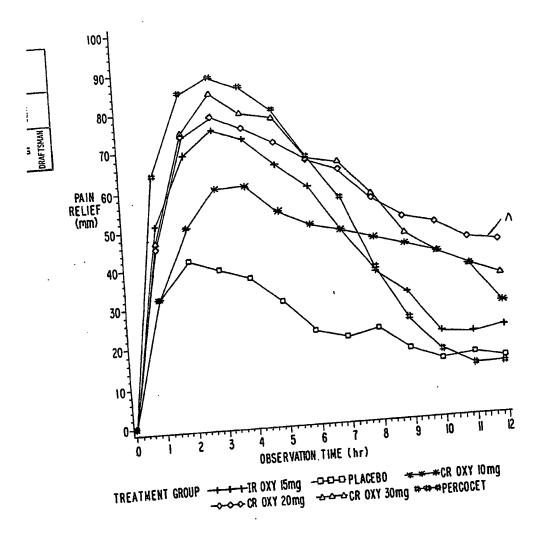
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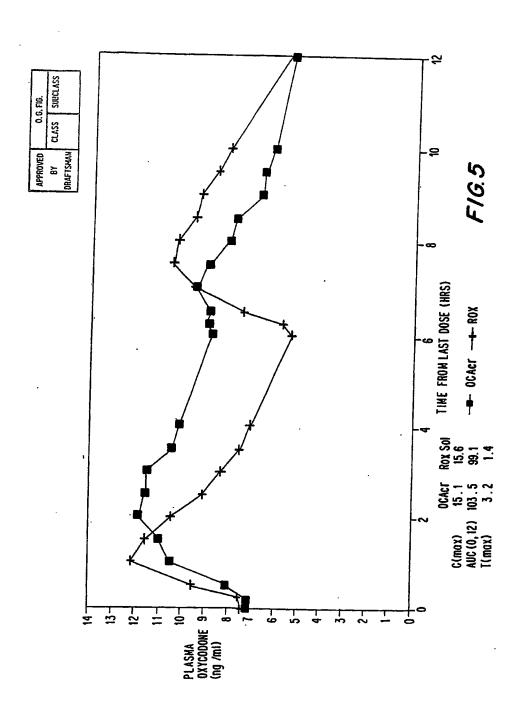
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93-311

UNITED STATES PATENT AND TRADEMARK OFFICE

Re:

Application of:

Benjamin OSHLACK et al.

Serial No.:

Not Yet Known

Filed:

Simultaneously

For:

CONTROLLED RELEASE OXYCODONE

COMPOSITIONS

LETTER RE: PRIORITY

Hon. Commissioner of Patents and Trademarks

June 18, 1993

Washington, D.C. 20231

Sir:

Applicants hereby claim, through International Application No. PCT/US92/10146 filed November 25, 1992, the priority of United States Patent Application Serial No. 07/800,549 filed November 27, 1991.

Respectfully Submitted,

STEINBERG AND RASKIN

Harold D. Steinberg

Reg. No. 17,255 (212) 768-3800

"Express Mail" mailing label no. RB 832 223 876 US
Date of Deposit: JUNE 18, 1993.
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STEINBERG & RASKIN

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51 Rec'd PCT/TTT 26 AUG 1993



UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Re:

Benjamin OSHLACK et al.

Serial No.:

08/081,302

Filed:

June 18, 1993

For:

CONTROLLED RELEASE OXYCODONE

COMPOSITIONS

INFORMATION DISCLOSURE STATEMENT

Hon. Commissioner of Patents and Trademarks Washington, D.C. 20231

August 24, 1993

sir:

Applicants hereby submit PTO form 1449 which lists references cited during the prosecution of the priority application, U.S. Serial No. 07/800,549 filed November 27, 1991. Copies of the references are enclosed.

This Information Disclosure Statement is being filed within three months from the filing date of the present application. Therefore, no fee is due under 37 C.F.R. §1.17(p).

It is respectfully requested that these references be considered and made of record.

Respectfully submitted,

STEINBERG & RASKIN

Davidson Clifford M. Reg. No. 32,728

Steinberg & Raskin 1140 Avenue of the Americas New York, New York 10036 (212) 768-3800

Enclosures PTO-1449 2 References

I hereby certify that this correspondence and/or fee is being deposited with the United States Postal Service as first class mail in an envelope addressed to "Commissioner of Patents and Trademarks," Washington, DC 20231" on August 24, 1993.

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U.S. Appl. No. 08 08 1303 DO/US WORKSHEET International Appl N	No. US98/10146				
Application filed by: 20 months 30 months	•				
PCT/IPEA/409 IPER (PCT/IPEA/416 on front) Search Report	0-Search Report				
RECEIPTS FROM THE APPLICANT: (other than checked above) Basic National Fee (paid or authorized to charge) Preliminary amendment(s) filed Translation of international application as filed: Description Claime Words in the drawing figure(s) Assignment document Article 19 amendments Power of attorney/Change of address Annexes to 409 Substitute specification Oath / Declaration Verified small status claim DNA diskette					
Notes:					
35 U.S.C. 371 - Receipt of Request (PTO-1390)	WIPO Publication Publ. ication No.				
Date acceptable oath / declaration received	WO/				
Date complete 35 U.S.C 371 requirements met	Publication Date				
102(e) Date Date of completion of DO/EO 906 - Notification of Missing 102(e) Requirements	Publication Language				
Date of completion of DO/EO 907 - Notification of Acceptance for 102(e) date	Not Published				
Date of completion of DO/EO-911 - Application accepted under 35 U.S.C. 1.11	Designated Designated Designated				
Date of completion of DO/EO 905 - Notification of Missing Requirements	Screening done by:				
Date of completion of DO/EO 916 - Notification of Defective Response					
Date of completion of DO/EO 903 - Notification of Acceptance					
Date of completion of DO/EO 909 - Notification of Abandonment May 1993					

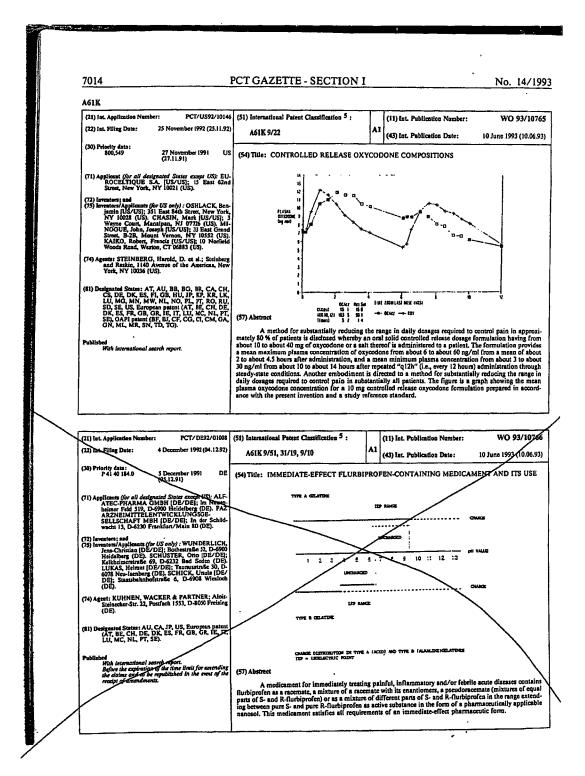
DO/EO BIBLIOGRAPHIC DATA ENTRY

SERIAL NUMBER: 08 / 081302 IA NUMBER: PCT/ US92 / 10146 FAMILY NAME: OSHLACK GIVEN NAME: BENJAMIN PRIORITY CLAIMED (Y/N): NO BASIC FEE (Y/N); ATTORNEY DOCKET NUMBER: N 93-311 CORRESPONDENTS NAME/ADDRESS: HAROLD D. STEINBERG STEINBERG & RASKIN 1140 AVENUE OF THE AMERICAS NEW YORK, NEW YORK 10036

06 / 18 / 93 11 / 25 / 92 RECEIPT DATE: 0
IA FILING DATE: 1
DELAY WAIVED (Y/N): DEMAND RECEIVED (Y/N): N PRIORITY DATE: 11 / 27 / 91 US DESIGNATED ONLY (Y/N): N COUNTRY: USX

APPLICATION TITLES: CONTROLLED RELEASE OXYCODONE COMPOSITIONS

OK TO UPDATE? (Y OR N) Y



HOMECOPY

INTERNATIONAL APPLICATION UNDER THE PATENT COOPERATION TREATY

THE UNDERSIGNED REQUESTS THAT THE PRESENT INTERNATIONAL APPLICATION BE PROCESSED ACCORDING TO THE PATENT COOPERATION TREATY

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INTERNATIONAL 25 NOV 1992
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Applicant's or agent's file reference 0 2 - 515

BOL NO. 1 TITLE OF INVENTION
Controlled Release Oxycodone Compositions
Row No. IS APPLICANT (WHETHER OR NOT ALSO INVENTOR); DESIGNATED STATES FOR WHICH HE/SHE/IT IS APPLICANT. Use this hos for indicating the applicant or, if there are several applicant, one of them. If more than one person (includes, where applicants, a legal unity) is involved, continue in Row No. III. Applicant and population of the person identified in this bos is (mark one check-hox only):
Name and address:** Euroceltique S.A.
15 East 62nd Street
New York, New York 10021
United States of America
Telephone mynther (including area code): Telegraphic address: Telepointer address:
212-832-7900
State of residence:
The nerson identified in the nes is approve on the purposes to transfer the second statement in the nest to the second statement to the second stateme
all designated all designated States except and America of America of America only in the "Supplemental Ros"
Ren No. III FURTHER APPLICANTS IF ANY: (FURTHER) INVENTORS, IF ANY: DESIGNATED STATES FOR WHICH THEY ARE APPLICANTS (IF APPLICARLE). A separate sub-bron has us be filted in its respect of each person includes, white applicable, a legal entity. If the following two sub-broases are insufficient, conditions in the "Supplemental flow," (ghing there for where applicable, a legal entity). If the following two sub-broases are insufficient, conditions in the "Supplemental flow," (ghing there for what additional person the same indications as those requested in the following two sub-broas) or by saing a "continual factory of the person identified in this sub-hoa is (mark one check-hoa only): Name and address:" OSHLACK, Benjamin 351 East 84th Street New York, New York, United States of America 10028
If the person identified in this pub-hos is applicant (or applicant and inventors), indicate also: State of nationality: US State of residence: US State of residence: US State of residence: US State of the state of the purposes of (mark one check-her only): all designated all designated States encorn the United States the United States of America only in the "Supplemental Residence only in
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Name and address:** CHASIN, Mark
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Manaipan, New Delbs, America 07726
If the person identified in this ords has is applicant for applicant and inventory, indicate also: State of revidence: State of revid
States the United States of America (CL) of America of all the designated
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APPLICANT

Euroceltique S.A.

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November 25, 1992 /

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1270.00 D unts entered in bases B and D, and enter total in box i. In in the total amount of the INTERNATIONAL FEE...... IV. TOTAL OF PRESCRIBED FEES SUBMITTED OR TO BE CHARGED TO DEPOSIT ACCOUNT 2675 00 TOTAL THE APPLICANT MAY PAY THE PRESCRIBED FEES BY (CHEQUE, POSTAL MONEY ORDER. BANE DRAFT, CASH, REVENUE STAMPS, COUPONS, ETC.), PAYMENT SHOULD BE MADE IN THE PRESCRIBED CURRENCY TO THE JACCOUNT OF, ACCOUNT INDICATED BELOW OF, ORDER OF THE RECEIVING OFFICE PAYMENT MAY ALSO BE MADE BY AUTHORIZATION TO CHARGE A DEPOSIT ACCOUNT AT THE RECEIVING OFFICE IF THE LATTER HAS A DEPOSIT ACCOUNT SYSTEM.

Davidso

PCT/US 92/10146

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The person identified in this sub-bux is (mark one check-box only): Name and address:**	applicant and policant only	nventor only *
MINOGUE, John Joseph 33 East Grand Street, B-2B Mount Vernon, New York, Uni	ited States of America l	0552
If the person identified in this sub-box is applicant for applicant and	inventor), indicate also:	
and amount may be seen in abherma tot rise beshoom or (until out o	itate of residence:***	ıl Box"
The person identified in this sub-box is (mark one check-box only); Name and address:**	4 (X) applicant and applicant only	nventor nly *
KAIKO, Robert Francis 10 Norfield Woods Road Weston, Connecticut, United	States of America 0688	3
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 If the person indicated as "applicant and inventor" or as "invento States, give the necessary indications in the "Supplemental box." 	or only" is not an Amentur for the purposes of all the desig	nated
** Indicate the name of a natural person by giving his/her family name entity by its full official designation. In the address, include both to	e first followed by the given carra(s), indicate the name of a the postal code (if any) and the State (name).	legal
*** If residence is not indicated, is will be assumed that the State of re		-
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PCT/L 92/10155

	Sheet number				
Ber (IN	Box No. IV AGENT (IF ANY) OR COMMON REPRESENTATIVE (IF ANY); ADDRESS FOR NOTIFICATIONS (IN CERTAIN CASES). A common representative may be appointed only if there are several applicants and if no agent is or has been appointed; the consume representative more been of the applicants. The following person (includes, where applicable, a legal entity) is hereby/has been appointed as agent or common representative to act on behalf of the applicants) before the competent featuremental Authorities.				
on I	The following person (includes, where applicable, a legal entity) is hereby/has been appointed as agent or common representative to act on behalf of the applicants) before the competent fatamentional Authorities:				
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H	arc	old D. <u>Steinberg</u> , Martin ford M. <u>Davidson</u> and Br	ı G.	Raskin,	
C.	lif	ford M. Davidson and Br	cian	Roffe of:	
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لعا	ep	Erropean Patent ⁽²⁾ : AT Austria, BE Belgium, DK Demmark, ES Spain, FR France, GB Unit NL Netherlands, SE Sweden, (1) and say other State which is a Contracting State of the	CH said King	of LI Switzerland and Licchtenstein, DE Germany, adom, GR Green, IT Justy, LU Luxenbourn, and Luxenbourn, and the Pet Luxenbourn, and the Pet Luxenbourn, and African Republic, Chad. Coneo, Gabon, Mali.	
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Additional EP countries: All countries currently					
members of the EPO including Ireland, Portugal					
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Res No. VI PRIORITY CI	AIM (IF ANY). The priority of the	following earlier application(s) is	hereby claimed:	
Country (country in which it was filed if national applica-	Filing Date (day, month, year)	Application No.	Office of filing (fill in only if the earlier application is an international applica- tior, or a regional applica-	
which it was liter it reports		07/800,549	tion)	
United State	(27/11/91)			
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If the present Request from is signed by the applicant is resu Office), a copy thereof must be	signed on behalf of any applicant b fred. If m such case it is desired to m a stacked to this form.	y an agent, a separate power of at ake use of a general power of attor	nemy appointing the agent and sey (deposited with the receiving	
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PALENT COOPERATION TREATY

From the RECEIVING OFFICE				
То:			PCT	
HAROLD D. STEINBERG				
STEINBERG & RASKIN 1140 AVENUE OF THE AMERICA: NEW YORK, NEW YORK 10036	5	APPLICA	TIONOF THE INTERNATIONAL ITION NUMBER AND OF THE RNATIONALFILING DATE	
	,		(PCT Rule 20.5(c))	
		Date of mailing (daylmorth/sear)	2 4 DEC 1992	
Applicant's or agent's file reference 92-515		імро	RTANT NOTIFICATION	
International application No.	International filing date	e(day/manth/year)	Priority date (day/morth/year)	
PCT/US92/10146	25 NO\	92	27 NOV 91	
Applicant EUROCELTIQUE S.A.	, <u> </u>			
Title of the invention CONTROLLED	RELEASE OXYCODON	E COMPOSITIONS		
			led the international application number and	
the international filing date indicated above. 2 The applicant is further notified that the record copy of the international application: 2 4 DEC 1992 was transmitted to the International Bureau on has not yet been transmitted to the International Bureau for the reason indicated below and a copy of this notification has been sent to the International Bureau*: because the necessary national security clearance has not yet been obtained. because (reason to be specified):				
NO LICENSE CURRENTLY RECUIRED FOR FOREIGN TRANSMITTAL OF THIS SUBJECT MATTER. 37 CFR 5.11(e) and/or 37 CFR 5.12 (a)				
• The International Bureau monitors the transmittal of the record copy by the receiving Office and will notify the applicant (with Form PCT/B/301) of its receipt. Should the record copy not have been received by the expiration of 14 months from the priority date, the International Bureau will notify the applicant (Rule 22.1(c)).				
Name and mailing address of the reor COMMISSIONER OF PATENTS A Box PCT Washington, D.C. 20231 Pacsimile No.				
Form PCT/RO/105 (July 1992)		MARK A. RO	CARTE	

PCT/US92/10

'ATENT COOPERATION TRE, Y

PCT

NOTIFICATION OF RECEIPT OF

RECORD COPY (PCT Rule 24.2(a)) From the INTERNATIONAL BUREAU

STEINBERG, Harold, D. Steinberg and Raskin 1140 Avenue of the Americas New York, NY 10036 **ÉTATS-UNIS D'AMÉRIQUE**

Date of mailing: 30 December 1992 (30.12.92)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference: 92-515	International application No.: PCT/US92/10146

The applicant is hereby notified that the International Bureau has received the record copy of the international application as Name(s) of the applicant(s) and State(s) for which they are applicants: EUROCELTIQUE S.A. (for all designated States except US) OSHLACK, Benjamin et al (for US) 25 November 1992 (25.11.92) International filing date 27 November 1991 (27.11.91) Priority date(s) claimed Date of receipt of the record copy 28 December 1992 (28.12.92) by the International Bureau Designated Offices which will be notified of the receipt of the record copy
$$\label{eq:ataubb} \begin{split} &\mathsf{AT}, \mathsf{AU}, \mathsf{BB}, \mathsf{BG}, \mathsf{BR}, \mathsf{CA}, \mathsf{CH}, \mathsf{CS}, \mathsf{DE}, \mathsf{DK}, \mathsf{EP}^{^{\bigstar}}, \mathsf{ES}, \mathsf{FI}, \mathsf{GB}, \mathsf{HU}, \\ &\mathsf{JP}, \mathsf{KP}, \mathsf{KR}, \mathsf{LK}, \mathsf{LU}, \mathsf{MG}, \mathsf{MN}, \mathsf{MW}, \mathsf{NL}, \mathsf{NO}, \mathsf{OA}, \mathsf{PL}, \mathsf{PT}, \mathsf{RO}, \mathsf{RU}, \end{split}$$
SD,SE,US * AT,BE,CH,DE,DK,ES,FR,GB,GR,IE,IT,LU,MC,NL,PT,SE ATTENTION The applicant should carefully check the data appearing in this Notification. In case of any discrepancy between these data and the indications in the international application, the applicant should immediately inform the International Bureau. in addition, the applicant's attention is drawn to the information contained in the Annex, relating to: time limits for entry into the national phase; confirmation of precautionary designations; requirements regarding priority documents. A copy of this Notification is being sent to the receiving Office and to the International Searching Authority. Authorised officer: The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland

Form PCT/18/301 (July 1992)

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J. Leitao

Telephone No. (41-22) 730.91.11

14. Other



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		communication from the				DATE MAILED: ().	4/11/94
æ 1	/ This a	application has been	examined [Responsive to comme	unication filed on		This action is made final.
				action is set to expire will cause the application	to become abandoned		s from the date of this letter.
Part	ı	THE FOLLOWING	ATTACHMENT(6)	ARE PART OF THIS ACT	ION:		
			by Applicant, PTO-	er, PTO-892. -1449. Changes, PTO-1474.			ation, Form PTO-152.
Part I	13	SUMMARY OF AC	TION				
4.	×	Claims					are pending in the application.
	•	Of the above	, dalms		···	aire w	ithdrawn from consideration.
2		Claims					have been cancelled.
3.		Claims					are allowed.
4.		Claims		P			are rejected.
8.		Claims					
Q.	×	Claims	1-	11	are	subject to restriction	or election requirement.
7.		This application has	been filed with info	ormal drawings under 37	C.F.R. 1.85 which are s	occeptable for exami	nation purposes.
8.		Formal drawings are	a required in respon	nse to this Office action.			
8.				ave been received on le (see explanation or No			R. 1.84 these drawings
10.				sheet(s) of drawings, filed miner (see explanation).	on	. has (have) been .	approved by the
11.		The proposed drawi	ing correction, filed	on	., has been 🗌 approv	red. 🗌 disapprove	ed (see explanation).
12				-		has Deen receiv	ved 🗖 not been received
		Li been filed in par	ent application, ser	rial no.	; filed on		
13.				condition for allowance e parte Quayle, 1935 C.D.		s, prosecution as to	the merits is closed in

Serial Number: 08/081,302

-2-

Art Unit: 1502

Restriction to one of the following inventions is required under 35 U.S.C. § 121:

- I. Claims 1-2, drawn to method, classified in Class 514, subclass 282.
- II. Claims 3-11, drawn to composition, classified in Class 424, subclass 464.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (M.P.E.P. § 806.05(h)). In the instant case the process as claimed can be practiced with another materially different product such as an injectable gel.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

-3-

Serial Number: 08/081,302

Art Unit: 1502

Should group II be elected, the following election of one of species a)-d) rejected below is required.

This application contains claims directed to the following patentably distinct species of the claimed invention:

- the composition of claims 3, 4
- the composition of claims 5, 6 b١
- the composition of claims 7, 8
- the composition of claims 9, 10 and 11. d)

Applicant is required under 35 U.S.C. § 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, a solid oral dosage form is generic.

Applicant is advised that a response to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 C.F.R. § 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. M.P.E.P. § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the

Serial Number: 08/081,302

-4-

Art Unit: 1502

case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. § 103 of the other invention.

Applicant is advised that the response to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward J. Webman whose telephone number is (703) 308-4432.

EDWARD J. WEBMAN PRIMARY ÉXAMINER GROUP 1500

Edward J. Webman:cb April 6, 1994



UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: E. Webman

Art Unit: 1502

Re: Application of:

Benjamin OSHLACK, et al.

Serial No.:

08/081,302 /

Filed:

June 18, 1993

For:

CONTROLLED RELEASE OXYCODONE COMPOSITIONS

RESPONSE TO RESTRICTION REQUIREMENT

Hon. Commissioner of Patents and Trademarks Washington, D.C. 20231

May 11, 1994

sir:

In response to the Restriction Requirement dated April 11, 1994, applicants hereby elect to prosecute Group II (claims 3-11), drawn to the composition, classified in Class 424, Subclass 464.

In the Restriction Requirement, the Examiner further required an election of one of species (a)-(d). Applicants hereby elect the "species" (d), in other words, the composition of claims 9, 10 and 11. This election is also made with traverse.

STEINBERG, RASKIN & DAVIDSON

hereby certify that this correspondence and/or fee s being deposited with the United States Postal Service is first class mail in an envelope addressed to Commissioner of Patents and Trademarks, Washington, DC 20231" ommissioner of May 11, 1994.

With regard to the Restriction Requirement, the Examiner states that inventions of Groups I (claims 1-2 drawn to the method) and II (claims 3-11 drawn to the composition) are distinct because "in the instant case the process as claimed can be practiced with another material different product such as an injectable gel".

In this case, it is respectfully submitted that the Examiner has failed to recognize the fact that claims 1 and 2 both specify that the method is related to administering an oral controlled release dosage formulation. Further, the composition of Group II are also only for oral administration. Therefore, to state that the process can be practiced with a materially different product as an injectable gel is simply not understood. In view of this fact, it is respectfully submitted that the restriction requirement has been overcome and should now be removed.

The Examiner's requirement of an election is also not understood. The subject matter of claims 3-11 is a controlled release oxycodone formulation which provides specified mean maximum plasma concentrations and mean minimum plasma concentrations for a given dosage range at a given range of time periods. It is not understood why an election is necessary. In view of this fact, the Examiner's election requirement is also traversed and it is requested that the Examiner remove this requirement.

hn early and favorable action on the merits is earnestly solicited.

If the Examiner would consider it beneficial to further discuss any aspect of this response or of the restriction requirement, then the Examiner is invited to contact the undersigned at the telephone number provided below.

Respectfully submitted,

STEINBERG, RASKIN & DAVIDSON

Clifford M. Davidson

STEINBERG, RASKIN & DAVIDSON 1140 Avenue of the Americas New York, New York 10036 (212) 768-3800

CMD/PF/93-311/RESTREQ.M11





UNITED STATES DEPARTMENT OF COMMERCE Patent and Trademark Office Address: COMMISSIONER OF PATENTS AND TRADEMARKS Weshington, D.C. 20231

	SERIAL NUMBER	FILING DATE	FIRST NAM	ED INVENTOR	<u> </u>	ATTORNEY DOCKET NO.
	08/081,30	02 06/18/93	OSHLACK			93311
). <i>(</i> } ,	1140 AVE	G & RASKIN NUE OF THE AM , NY 10036	15M1/082 ERICAS	22	WEBMAN, E. E.	PAPER NUMBER
	This is a communk	•	in charge of your application DEMARKS		1502 DATE MAILED:	08/22/94
	A shortened statute Failure to respond	ory period for response to within the period for respo	Responsive to commit this action is set to expire _ onse will cause the application.	month(s), on to become abando	days fro	This action is made final. In the date of this letter.
	1. Notice	of References Cited by Ex	S) ARE PART OF THIS AC caminer, PTO-892. PTO-1449. wing Changes, PTO-1474.	2. Not	ice of Draftsman's Pa ice of Informal Patent	tent Drawing Review, PTO-948. Application, PTO-152.
	Part II SUMMAI	1.	- 11 1-8		are	_are pending in the application.
•						
	3. LJ Claims _	9	7-11			are rejected.
	5 Claims					_ are objected to.
	_		informal drawings under 37			
			sponse to this Office action.			
	9. The corre	cted or substitute drawing ceptable; I not acceptat	s have been received on ble (see explanation or Notic	e of Draftsman's Pate	. Under 37 (int Drawing Review, F	C.F.R. 1.84 these drawings TO-948).
	examiner	: disapproved by the o	ute sheet(s) of drawings, file examiner (see explanation).			
			iled			
	12. Acknowle	dgement is made of the c iled in parent application,	laim for priority under 35 U. serial no.	S.C. 119. The certifie	d copy has D been	received not been received
	13. Since this accordan	s application apppears to t ce with the practice under	oe in condition for allowance Ex parte Quayle, 1935 C.D	except for formal mat , 11; 453 O.G. 213.	tters, prosecution as t	o the merits is closed in
	14. Chher					

Serial Number: 07/081,302

Art Unit: 1502

-2-

Applicant's election with traverse of claims 9, 10, 11 in Paper No. 5 is acknowledged. The traversal is on the ground(s) that the method requires oral administration. This is not found persuasive because the method of use is to reduce pain, not necessarily by oral administration. The election is over various species of formulations: an unspecified formulation, e.g., a solution, an unspecified solid, a coated spheroid, and a table.

The requirement is still deemed proper and is therefore made FINAL.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --A person shall be entitled to a patent unless -35 U.S.C. § 101 reads as follows:
"Whoever invents or discovers any new and useful process,
machine, manufacture, or composition of matter or any new
and useful improvement thereof, may obtain a patent
therefore, subject to the conditions and requirements of this title".

Claims 9-11 are rejected under 35 U.S.C. § 102(b) as being anticipated by 4,990,341.

Applicants disclose that 4,990,341 teaches opoid analgesics with the claimed rate of release (page 2, lines 8-20). Table's are disclosed (example 1 in '341).

No claims allowed.

Serial Number: 07/081,302

-3-

Art Unit: 1502

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward J. Webman whose telephone number is (703) 308-4432.

Webman:css August 20, 1994 EDWARD J. WEBMAN PRIMARY EXAMINER GROUP 1500

NOTICE OF DRAFTSPERSON'S PATENT DRAWING REVIEW

PTO Draftpersons review all originally filed drawings regardless of whether they are designated as formal or informal. Additionally, patent Examiners will review the drawings for compliance with the regulations. Direct telephone inquiries concerning this review to

the Drawing Review Branch, 703-305-8404,	topical Providence — frame — B — —
1110160	•
The disavines filed (insert date) 6/FX/9/2, are	Modified forms. 37 CFR 1.84(h)(5)
The deavings filed (insert date) 6 77, are A not objected to by the Draftsperson under 37 CFR 1.84 or 1.152.	Modified forms of construction must be shown in separate views.
	Fig(s)
B objected to by the Draftsperson under 37 CFR 1.84 or 1.152 as	115(0)
indicated below. The Examiner will require submission of new, corrected	
drawings when necessary. Corrected drawings must be submitted	8. ARRANGEMENT OF VIEWS. 37 CFR 1.84(i)
according to the instructions on the back of this Notice.	View placed upon another view or within outline of another.
	Fig(s)
1. DRAWINGS. 37 CFR 1.84(a): Acceptable categories of drawings:	Words do not appear in a horizontal, left-to-right fashion when
Black ink. Color.	page is either upright or turned so that the top becomes the right
Not black solid lines. Fig(s)	side, except for graphs. Fig(s)
Color drawings are not acceptable until petition is granted.	
•	9. SCALE, 37 CFR 1.84(k)
2. PHOTOGRAPHS. 37 CFR 1.84(b)	Scale not large enough to show mechanism without crowding
Photographs are not acceptable until petition is granted.	when drawing is reduced in size to two-thirds in reproduction.
	
3. GRAPHIC FORMS. 37 CFR 1.84 (d)	Fig(s) Indication such as "actual size" or "scale 1/2" not permitted.
Chemical or mathematical formula not labeled as separate figure.	
Fig(s)	Fig(s)
Group of waveforms not presented as a single figure, using	Elements of same view not in proportion to each other.
common vertical axis with time extending along horizontal axis.	Fig(s)
Fig(s)	 CHARACTER OF LINES, NUMBERS, & LETTERS. 37 CFR 1.84(I)
designation adjacent to the vertical axis. Fig(s)	Lines, numbers & letters not uniformly thick and well defined,
designation adjacent to the vertical axis. 1 · g(*)	clean, durable, and black (except for color drawings).
4 TO THE CALL PURE 27 CTT 184(-)	Fig(s)
4. TYPE OF PAPER. 37 CFR 1.84(c)	• 1811/
Paper not flexible, strong, white, smooth, nonshiny, and durable.	44 CHARLES OF CENT 1 B//>
Sheet(s)	11. SHADING. 37 CFR 1.84(m)
Erasures, alterations, overwritings, interlineations, cracks, creases,	Shading used for other than shape of spherical, cylindrical, and
and folds not allowed. Sheet(s)	conical elements of an object, or for flat parts.
	Fig(s)
5. SIZE OF PAPER. 37 CFR 1.84(f): Acceptable paper sizes:	Solid black shading areas not permitted. Fig(s)
21.6 cm. by 35.6 cm. (8 1/2 by 14 inches)	
21.6 cm. by 33.1 cm. (8 1/2 by 13 inches)	12. NUMBERS, LETTERS, & REFERENCE CHARACTERS. 37 CFR
21.6 cm. by 27.9 cm. (8 1/2 by 11 inches)	1.84(p)
21.0 cm, hv 29.7 cm, (DIN size A4)	Numbers and reference characters not plain and legible. 37 CFR
All drawing sheets not the same size. Sheet(s)	
Drawing sheet not an acceptable size. Sheet(s)	1.84(p)(l) Fig(s)
	hrackets, inverted commas, or enclosed within outlines. 37 CFR
6. MARGINS. 37 CFR 1.84(g): Acceptable margins:	
	1.84(p)(I) Fig(s)
Paper size	Numbers and reference characters not offended in state direction as
21.6 cm. X 35.6 cm. 21.6 cm. X 33.1 cm. 21 cm. X 27.9 cm. 21 cm. X 29.7 cm. (8 1/2 X 14 inches) (8 1/2 X 13 inches) (8 1/2 X 11 inches) (DIN Size A4)	the view. 37 CFR 1.84(p)(i) Fig(s)
T 5.1 cm. (2") 2.5 cm. (1") 2.5 cm. (1") 2.5 cm.	English alphabet not used. 37 CFR 1.84(p)(2)
L .64 cm. (1/4") .64 cm. (1/4") .64 cm. (1/4") 2.5 cm.	Fig(s)
R .64 cm. (1/4") .64 cm. (1/4") .64 cm. (1/4") 1.5 cm.	Numbers, letters, and reference characters do not measure at least
B .64 cm. (1/4") .64 cm. (1/4") .64 cm. (1/4") 1.0 cm.	.32 cm. (1/8 inch) in height. 37 CFR(p)(3)
Margins do not conform to chart above.	Fig(s)
Shoet(s)	
Top (I)Left (L)Right (R)Bottom (B)	13. LEAD LINES. 37 CFR 1.84(q)
47 CFD 1 84/b)	Lead lines cross each other. Fig(s)
7. VIEWS. 37 CFR 1.84(h)	Lead lines missing. Fig(s)
REMINDER: Specification may require revision to correspond to	Lead lines not as short as possible. Fig(s)
drawing changes.	
All views not grouped together. Fig(s)	
Views connected by projection lines. Fig(s)	14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.84(1)
Views contain center lines. Fig(s)	Number appears in top margin. Fig(s)
Partial views. 37 CFR 1.84(h)(2)	Number not larger than reference characters.
Separate sheets not linked edge to edge.	Fig(s)
Fig(s)	Sheets not numbered consecutively, and in Arabic numerals,
View and enlarged view not labeled separately.	beginning with number 1. Shoet(s)
Fig(s)	
Long view relationship between different parts not clear and	15. NUMBER OF VIEWS. 37 CFR 1.84(u)
unambiguous. 27 CFR 1.84(h)(2)(ii)	Views not numbered consecutively, and in Arabic numerals,
Fig(s)	beginning with number 1 Fig(s)
Sectional views, 37 CFR 1.84(h)(3)	View numbers not preceded by the abbreviation Fig.
Hatching not indicated for sectional portions of an object.	Electric and the biory and place approximation rife.
Fig(s)	Fig(s)
Hatching of regularly spaced oblique parallel lines not spaced	Single view contains a view number and the abbreviation Fig.
sufficiently. Fig(s)	Numbers not larger than reference characters.
Hatching not at substantial angle to surrounding axes or principal	Fig(s)
	•
lines. Fig(s)	16. CORRECTIONS, 37 CFR 1.84(w)
Cross section not drawn same as view with parts in cross section	Corrections not durable and permanent. Fig(s)
with regularly spaced parallel oblique strokes.	
Fig(s)	
Hatching of juxtaposed different elements not angled in a different	17. DESIGN DRAWING. 37 CFR 1.152
way. Fig(s)	Surface shading shown not appropriate. Fig(s)
Alternate position, 37 CFR 1.84(h)(4)	Solid black shading not used for color contrast.
A separate view required for a moved position.	Fig(s)
Fig(s) ·	



FORM FTO-1083

Docket No. <u>93-311</u> Date: February 22, 1995

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In re application of:

Benjamin OSHLACK, et al.

Serial No.: Filed:

08/081,302 June 18, 1993

CONTROLLED RELEASE OXYCODONE COMPOSITIONS

THE COMMISSIONER OF PATENTS AND TRADEMARKS Washington, DC 20231

Transmitted herewith is an Amendment in the above-identified application.

[] Small entity status of this application under 37 CFR 1.9 and 1.27 has been established by a verified statement previously submitted.

[] A verified statement to establish small entity status under 37 CFR 1.9 and 1.27 is enclosed.

[X] No fee for additional claims is required.

[] A filing fee for additional claims calculated as shown below, is required:

LARGE ENTITY SMALL ENTITY (Col. 1) RATE FEE <u>OR</u> RATE REMAINING HIGHEST

AFTER PREVIOUSLY PRESENT FOR: AMENDMENT PAID FOR EXTRA TOTAL CLAIMS Minus** INDEP. CLAIMS * 1 Minus*** 3= 0

[] FIRST PRESENTATION OF MULTIPLE DEP. CLAIM 38 TOTAL: TOTAL: <u>OR</u>

* If the entry in Co. 1 is less than the entry in Col. 2, write "O" in Col. 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, write "20" in this space.

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, write "3" in this space.

[X] Also transmitted herewith are:

[X] Petition for extension under 37 CFR 1.136 (in duplicate)

[] Other:

Please charge my Deposit Account No. 19-4210 in the amount of ______. A duplicate copy of this sheet is enclosed. []

A check in the amount of \$870.00 is attached to cover: [X]

[] Filing fee for additional claims under 37 CFR 1.16

[X] Petition fee for extension under 37 CFR 1.136

[] Other:

The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment (X) to Deposit Account No. 19-4210. A duplicate copy of this sheet is enclosed.

Any filing fee under 37 CFR 1.16 for the presentation of additional claims which are not paid by check submitted herewith.

Any patent application processing fees under 37 CFR 1.17. 11

Any petition fees for extension under 37 CFR 1.136 which are not paid by check submitted herewith, and it is hereby requested that [X]

this be a petition for an automatic extension of time under 37 CFR 1.136.

Clifford M. Davidson Reg. No. 32,728

STEINBERG, RASKIN AND DAVIDSON P.C.

1140 Avenue of the Americas New York, New York 10036

(212) 768-3800

I hereby certify that this correspondence and/or fee is being deposited with the United States Postal Service as first class mail in an envelope addressed to: "Commissioner of Patents and Trademarks, Washington, DC 20231" on <u>February 22, 1995</u>.

STEINBERG, BASKUL AND DAVIDSON P.C.

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93-311

UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: E. Webman

Art Unit: 1502

Re: Application of:

Benjamin OSHLACK, et al.

Serial No.:

08/081,302

June 18, 1993

Filed: For:

CONTROLLED RELEASE

OXYCODONE COMPOSITIONS

PETITION FOR EXTENSION UNDER 37 CFR 1.136(a)

Hon. Commissioner of Patents and Trademarks Washington, D.C. 20231

February 22, 1995

Applicants hereby petition the Commissioner of Patents and Trademarks to extend the time for response to the Office Action dated August 22, 1994 for three months from November 22, 1994 to February 22, 1995.

Submitted herewith is a check for \$870.00 to cover the cost of the extension.

Any deficiency or overpayment should be charged or credited to Deposit Account No. 19-4210. A duplicate copy of this sheet is enclosed.

> Respectfully Submitted, STEINBERG, RASKIN & DAVIDSON, P.C.

Davidson Clafford M. Reg. No. 32,728

Steinberg, Raskin & Davidson, P.C. 1140 Avenue of the Americas New York, N.Y. 10036 (212) 768-3800

I hereby certify that this correspondence and/or fee is being deposited with the United States Postal Service as first class mail in an envelope addressed to "Commissioner of Patents and Tradeaurie Mashington, D.C. 20231

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UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: E. Webman

Art Unit: 1502

Re: Application of:

Benjamin OSHLACK, et al.

Serial No.:

08/081,302

Filed:

June 18, 1993

For:

CONTROLLED RELEASE OXYCODONE COMPOSITIONS

AMENDMENT

Hon. Commissioner of Patents and Trademarks Washington, D.C. 20231

February 22, 1995

93-311

sir:

In response to the Office Action dated August 22, 1994, Applicants submit the following remarks:

REMARKS

Reconsideration of the present application is respectfully requested.

The Restriction Requirement

In the Office Action dated August 22, 1994, the Examiner has acknowledged Applicants' election of claims 9-11 with traverse and made the restriction requirement final, removing claims 1-8 from further consideration. Applicants respectfully reserve the